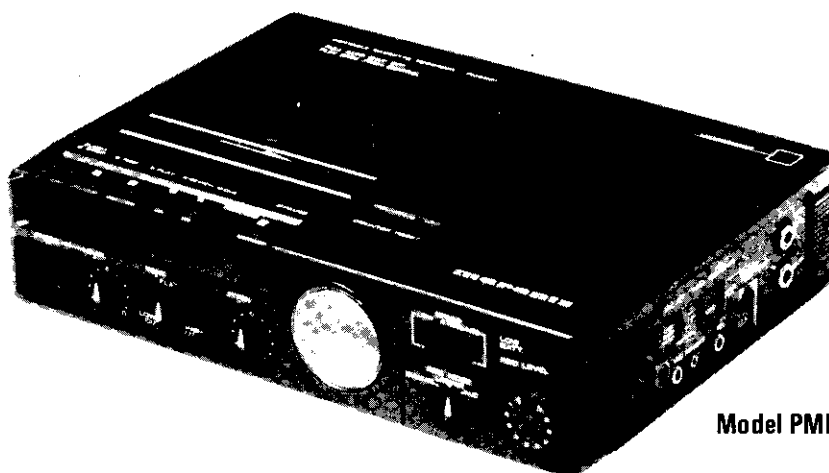


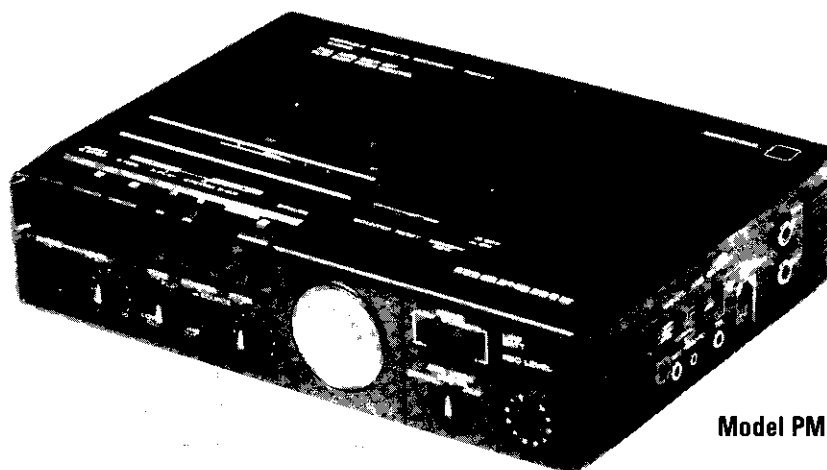
Model PMD 201/PMD221

OWNER'S MANUAL

PORTABLE CASSETTE RECORDER



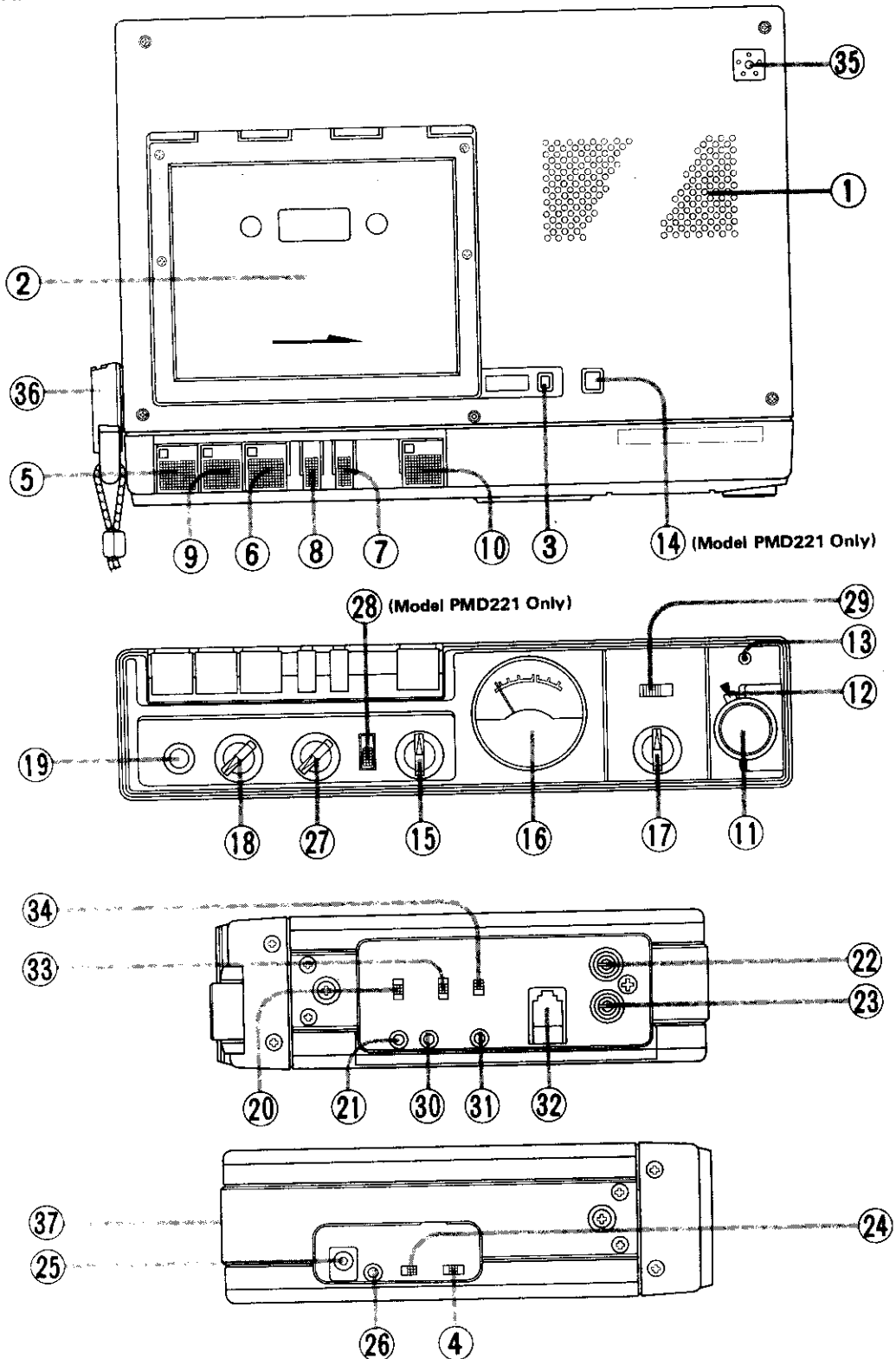
Model PMD201



Model PMD221

marantz®

MARANTZ PROFESSIONAL PRODUCTS, 700 NORTH COMMERCE, AURORA, ILLINOIS 60504



WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

FOREWARD

To obtain maximum performance and enjoyment from your Portable Cassette Recorder, please study these instructions carefully. Installing and operating your unit is not complicated, but the flexibility provided by its numerous operating features merit your becoming familiar with its controls and connections. Our recommended procedure will assure you of securing the superb performance for which your Cassette Recorder was designed.

For convenience, this manual is divided into two parts. The first part outlines a simplified operating procedure. The second part provides a more detailed description of the features of your Cassette Recorder, and explains some of the finer points of recording techniques.

For quick identification of the many controls, connections, and adjustments on your unit, all references to them in this manual are printed in **BOLDFACE** type.

AFTER UNPACKING

It is advisable to retain all original packing material to prevent damage should you wish to transport your unit (refer to page 7 for Repacking and Shipping instructions). Be careful that you do not inadvertently throw away or lose the parts packed with the unit. Please inspect your Cassette Recorder carefully. Our very strict quality control and professional pride ensure that each unit leaves the factory in perfect condition. If the unit is damaged or fails to operate, immediately notify your dealer. If the unit was shipped to you directly, notify the transportation company without delay. Only you, the consignee, may institute a claim against the carrier for shipping damage. Save the carton and all packing material as evidence of damage for their inspection. Should assistance be required, the Marantz Company will cooperate fully in assisting your claim.

PURCHASER'S RECORD

MODEL NO. _____
(Located on Front of Unit)

SERIAL NO. _____
(Located on Rear of Unit)

Cost _____ Date _____

This information becomes your permanent record of a valuable purchase. It should be filled in promptly then kept in a safe place along with your purchase receipt to be referred to as necessary for insurance purposes or when corresponding with Marantz.

IMPORTANT

WHEN SEEKING WARRANTY SERVICE, IT IS THE RESPONSIBILITY OF THE CONSUMER TO ESTABLISH PROOF AND DATE OF PURCHASE. (YOUR PURCHASE RECEIPT OR INVOICE IS ADEQUATE FOR SUCH PROOF.)

WARNING

RECORDING OF TELEPHONE CONVERSATIONS OR COMMUNICATIONS WITHOUT THE CONSENT OF ALL PARTIES THERETO MAY BE A VIOLATION OF LAW.

QUICK REFERENCE INDEX

The drawings in Figure 1 provide a reference number for each of the panel features. These numbers reference a descriptive paragraph about the feature and may be located in the **PANEL FEATURES** section.

Before operating your new unit, take a few moments to acquaint yourself with some of the features and terminology you will encounter in this book.

PANEL FEATURES

① SPEAKER

② CASSETTE COMPARTMENT

③ TAPE COUNTER

Used for easy reference and indexing. To return the numbers to "000" depress the **RESET** button.

④ TAPE SELECTOR

Selects the proper bias and equalization to suit the most common types of cassette tapes.

NORM — for normal ferric oxide tapes
CrO₂ — for chromium dioxide and other tapes requiring 70 μ s equalization and high bias
METAL — for metal tapes

⑤ STOP/EJECT BUTTON

The **STOP/EJECT** button serves a dual purpose. To stop the tape in any mode, depress the button lightly. To open the cassette compartment lid, release the button and depress again firmly.

⑥ PLAY BUTTON

When depressed, the **PLAY** button engages the playback circuitry for flawless reproduction of previously recorded tapes.

⑦ FAST FORWARD/CUE BUTTON (FF/CUE)

Depress this button for rapid advancement to any desired point on the tape. If depressed during playback, the tape will advance until the button is released, at which point tape play resumes automatically.

⑧ REWIND/REVIEW BUTTON (REW/REVIEW)

Depress this button to rapidly rewind a tape. If depressed during playback, the tape will rewind until the button is released, at which point tape play resumes automatically.

⑨ RECORD BUTTON (REC)

Press this button together with the **PLAY** button to begin recording.

⑩ PAUSE BUTTON

To stop a tape in play or record modes.

11 RECORD LEVEL CONTROLS

To increase the recording levels, turn the knob to the right.

12 REC INDICATOR

When your unit is recording, this indicator will light up red.

13 LOW BATTERY INDICATOR

When the batteries are exhausted, this indicator lights. When the battery condition is satisfactory, this indicator remains off.

14 MEMORY REW SWITCH (For Model PMD221)

When the tape is rewound with the **MEMORY REW** switch set to **ON**, tape travel stops when the counter reaches "999".

15 PITCH CONTROL

When the **PITCH** control knob is at the "0" position, it is set at normal speed. Turn it in the **H** direction to increase the tape speed. Turn it in the **L** direction to decrease the tape speed.

16 VU METER

The **VU** meter indicates the average recording/playback level.

17 REC MODE SWITCH

MANUAL: At this setting, the recording level can be adjusted manually to your preference.

LIMITER: At this setting, the transient high level input signals are automatically decreased to a safe recording level.

ALC: At this setting, the recording level is automatically set to optimum level.

18 LEVEL CONTROL

The **LEVEL** control regulates the sound volume heard through the speaker or headphone.

19 PHONE JACK

Accepts headphones (optional) utilizing a standard stereo or mono phone plug.

20 MICROPHONE ATTENUATOR SWITCH

For extremely loud volume microphone recordings, depressing this switch prevents input overload and better record level adjustment.

This switch also functions for direct telephone or built-in microphone recording.

21 MICROPHONE JACKS

Will accept any low impedance microphone (optional) utilizing a 3.5 mm phone plug.

NOTE:

When microphones are selected for recording do not monitor through speakers as this will cause howling (acoustic feedback) which could damage your audio equipment. Use headphones for monitoring.

22 LINE INPUT

Should be connected to the tape output jacks of your amplifier.

23 LINE OUTPUT

Should be connected to the tape monitor inputs of your amplifier.

24 SPEAKER ON/OFF SWITCH (SPKR MON)

Place this switch in the **ON** position to monitor recordings through the built-in speaker.

25 EXTERNAL DC POWER INPUT JACK (DC 4.5 V)

This jack is provided to operate your portable cassette recorder from an external 4.5 volt DC power source.

26 EXT SP JACK

Accesses the 3.5 mm plug of an external speaker.

27 TONE CONTROL

Used to adjust the sound quality heard through the speaker, headphone or direct telephone system. When the knob is turned counterclockwise, the low frequency sound is decreased. When the knob is turned clockwise, the high frequency sound is increased.

28 MONITOR SWITCH (For Model PMD221)

When recording, this switch may be placed in the **SOURCE** position to monitor the signal before it is recorded, or the **TAPE** position to monitor the signal actually recorded on the tape.

NOTE:

When the **MONITOR** switch is set to **SOURCE**, howling may occur. At that time, lower the monitoring volume.

29 TAPE SPEED SELECTOR

STANDARD: The tape travels at normal speed: 1-7/8 ips (4.75 cm/sec).

LOW: The tape travels at slower speed: 15/16 ips (2.38 cm/sec).

30 REMOTE JACK

This jack accesses a 2.5 mm plug. With a microphone equipped with a remote switch, playback or recording can be stopped temporarily.

31 TELEPHONE PICK-UP JACK

This jack accesses the telephone pick-up for telephone recording.

32 DIRECT TELEPHONE MODULAR JACK

With a telephone line connected to the direct telephone modular jack, it is possible to record messages and play pre-recorded messages back through the telephone line.

33 ANC SELECTOR

Used to select flat (**NORMAL**), low cut (/) or high and low cut (\) modes for a microphone, telephone pick-up or direct telephone recording according to the signal condition.

34 INPUT SELECTOR

Used to select an input signal between **LINE**, **MIC/TEL** and **DIRECT TELEPHONE**.

35 ECM

Stands for a built-in electret condenser microphone. Use this microphone with the **INPUT SELECTOR** set to **MIC/TEL**.

36 SHOULDER STRAP

37 BATTERY COMPARTMENT

Accepts three "D" size batteries or the Marantz Rechargeable Battery Pack (RB430).

POWER SOURCES

Your Cassette Recorder may be operated using any of three power sources:

BATTERY OPERATION (BATTERIES NOT INCLUDED)

- Open the Battery Compartment cover by depressing the finger grip and pulling out (See Figure 2 on Page 15).
- Install three "D" size batteries.

IMPORTANT:

Each battery should be installed observing the correct polarity as shown in Figure 2 on page 15.

- Close the battery compartment cover.

NOTE:

When the **LOW** battery indicator lights with the power supplied, replace all the batteries.

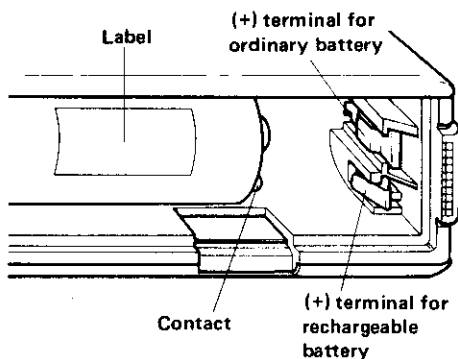


Figure 3

RECHARGEABLE BATTERY PACK

The RB430 can be recharged again and again, thereby eliminating the need for frequent battery replacement.

RECHARGEABLE BATTERY PACK INSTALLATION

Open the battery compartment cover, then install the battery pack by pressing the flat negative (—) side of the pack against the spring and positioning the positive (+) side of the pack against the charging terminal of the recorder. Make sure that the label side of the battery pack is facing up.

CHARGING THE BATTERY PACK

The battery pack can be charged by connecting the AC adaptor. (There is no need to operate the recorder at this time.)

AC POWER

The AC adaptor accessory makes it possible to operate the recorder on AC power. Before plugging the adaptor into an AC outlet, check the outlet voltage and set the AC adaptor for that voltage. After wards, insert the AC adaptor's output plug into the 4.5 V DC jack in the recorder.

NOTE:

The RB430 Battery Pack is automatically recharged, and the batteries disconnected, when the power cord is connected to the AC receptacle.

CAUTION:

When not using the recorder, unplug the AC adaptor from the wall outlet and the DC jack on the recorder.

CAUTION FOR RECHARGEABLE BATTERY

It takes approximately 16 to 24 hours to recharge the RB430 Battery Pack. Charging for a longer period of time will overcharge the RB430, and will shorten the life of your battery pack.

The battery can be destroyed if shorting, so be careful to avoid shortage.

OPERATION DURING CHARGING

It is advisable not to operate the unit during charging as it could cause problems with the AC adaptor.

CAUTION UPON USING THE AC ADAPTOR

If the AC adaptor is detached from the AC outlet but is still plugged into the PMD201 or PMD221, the unit cannot operate even if power is supplied from another source (batteries for example).

AC ADAPTOR

The AC adaptor accessory can only be used with the PMD201 or the PMD221.

Do not use this AC adaptor for other units or purposes as this could cause problems.

POWER FROM AN EXTERNAL DC SOURCE

This unit can also be operated with an external DC power source of 4.5 V and 700 mA. A "DC to DC" converter must be used to operate the unit with DC power sources other than 4.5 volts, such as a 12 volt automobile battery. DC to DC converters for this purpose may be purchased at many retail electronics stores. To operate this unit, the DC to DC converter must have a plug that will fit the DC "4.5V" Input jack on the side of the unit. This plug must be the same type of coaxial sleeve power plug found on the AC adaptor supplied with your unit. Note that this plug has an outer diameter of 0.217 inch, an inner diameter of 0.080 inch, and a length of 0.375 inch. The converter output must produce 4.5 V DC and 700 mA. Connect the 4.5 V DC output plug of the DC to DC converter to the Input jack labeled "4.5 V" on the side of the unit, and follow the DC to DC converter manufacturers' instructions for connection to a 12 V or other power source.

NOTE:

The outer sleeve of the DC to DC converter plug must be positive (+), and the inner sleeve must be negative (—). It is very important that any DC to DC converter used with this unit must confirm to these specifications, or serious damage to your unit may be caused.

OPERATING INSTRUCTIONS

PRELIMINARY CONTROL SETTINGS

REC MODE	MANUAL
INPUT SELECTOR	Set to the position which corresponds to the desired input signal.
ANC	FLAT
Rec Level	Minimum (to left)
Volume	Minimum (to left)
Monitor	Source
(PMD221 Only)	
Tape Select	Set EQ and BIAS to match the type of tape you are using
SPKR MON	ON
MIC ATT	0 dB

RECORDING CONNECTIONS

You may record through the Microphone or Line Input jacks.

For microphone recording, connect the individual microphone to the **MIC** jack of your cassette recorder. Please note that only microphones with a 3.5 mm phone plug may be used.

The line input jack is used to record line level signals from an external source such as a receiver or another tape recorder. Connect an audio cable (with a phono plug termination) to the **LINE IN** jack of your cassette recorder, and the other end of the cable (terminated with an appropriate plug) to the output jack of the external source.

TO RECORD

1. Insert a blank cassette.
2. Push the **REC** button and the **PLAY** button together.

Your Cassette Recorder is now in the record mode.

TAPE AND BRAND OF TAPES TO USE

In cassette recording, the type and brands of cassettes you use have a great influence on the quality of your recordings. Therefore, it is advantageous to purchase the highest quality cassettes available. Chromium dioxide (CrO_2) and metal tapes generally provide better fidelity than normal ferric oxide tapes. When using these kinds of tapes, set the **TAPE SELECTOR** switch on the unit to the correct position to suit the characteristics of the tape.

We recommend the use of cassettes with a recording capacity of 90 minutes or less. In production, the performance of our cassette decks is tested using the following tapes:

NORMAL	BASF	Performance Series
		Studio Series
		Professional I
	FUJI	FX-1
		FL
	MAXELL	LN
		UD-XL 1
		UD
	MEMOREX	MRX ₃
	SCOTCH	Master I
		Dynarange
		Highlander
	SONY	Low Noise
		High Fidelity
	TDK	AD Series
		D
		M

CrO_2	BASF	Professional II
		Chromium Dioxide
		FX-11
		UD-XL11
		High Bias
		Master II
	FUJI	Chrome
	MAXELL	SA Series
	MEMOREX	
	SCOTCH	
	SONY	
	TDK	
METAL	SCOTCH	Metafine
	TDK	MA Series

MONITORING DURING RECORD

SOURCE MONITORING (for PMD221 only)

With the **MONITOR** switch is in the **SOURCE** position and the **SPKR MON** is switched **ON**, you will be able to monitor the source being recorded by simply turning up the **LEVEL** control.

SOURCE MONITORING (PMD201 only)

With the **SPKR MON** switched **ON**, you will be able to monitor the source being recorded by simply turning up the **LEVEL** control. Monitoring may be accomplished through the use of the internal speaker, or a headphone.

TAPE MONITORING (PMD221 only)

In addition to source monitoring, the PMD221 contains a third head which enables you to monitor directly from the tape as a recording is made. To use this feature, place the **MONITOR** switch in the **TAPE** position and turn up the **LEVEL** control.

Source and tape monitoring may be accomplished through the use of the internal speaker, external speakers, line output connections or a headphone.

NOTE:

A stereo headphone can also be used.

CAUTION:

To avoid audio feedback when making a microphone recording, place the microphone a suitable distance away from the speaker. If desired, the internal speaker may be disconnected by placing the **SPKR MON** switch to the **OFF** position.

ADVANCED RECORDING TECHNIQUES

CONTROLLING THE RECORDING LEVEL

The best method of controlling the recording level is determined by the content of the particular program source. Use the guidelines below to obtain the desired recording results.

REC MODE

LIMITER: Allows you to manually set the recording level of the **REC LEVEL** control while an internal limiter circuit automatically prevents overload distortion resulting from sudden level peaks.

MANUAL: Permits manual control of the recording level for maximum dynamic range.

ALC: At this setting, the recording level is automatically set to the optimum level regardless of the **REC LEVEL** control setting.

SETTING THE RECORD LEVEL

PROCEDURES FOR RECORDING WITH THE LIMITER

Turn on the **LIMITER** after setting the recording level. To set the level, switch to **MANUAL**, then adjust the **REC LEVEL** control while watching the VU meter.

Ordinarily, the VU meter needle deflection should be as large as possible. If the VU meter needle stays on the right side of the scale, the level is too high and results in distorted sound. Conversely, if the VU meter needle stays on the left side of the scale, the level is too low and a poor S/N ratio will result.

HIGH VOLUME MICROPHONE RECORDINGS

Certain microphone recording situations may result in extremely high microphone input levels. In such cases the **REC LEVEL** control cannot be set to the desired position without VU meter deflection far into the red zone. A greater range of **REC LEVEL** control rotation can be obtained by the **MIC ATT** switch. This switch will attenuate the input level by 10 dB or 20 dB. In normal recording, leave the **MIC ATT** switch in the "0 dB" position.

LONG PLAY

When the **SPEED** selector is set to **LOW**, the tape speed is halved and the recording time doubles.

NOTE:

Do not change the **SPEED** selector setting during recording.

TO PROTECT VALUABLE RECORDINGS

You can prevent your valuable recordings from being erased by removing the safety tabs on your cassette tape.

Use a small screwdriver to breakout one or both safety tabs. (Figure 4 on Page 15 shows how to remove the side "A" safety tab.)

The recording capability of either side of a cassette can be restored by covering the appropriate opening where the tab was removed with cellophane tape. (Figure 5 on Page 15 shows cellophane tape applied to side "A" safety tab opening.)

TO PLAYBACK

1. Insert a pre-recorded cassette, or playback a tape just recorded — rewind the tape to the beginning.
2. Be sure the EQ setting of the **TAPE SELECTOR** switch matches the type of tape you are using.
 - METAL 70 μ s
 - CrO₂ 70 μ s
 - NORMAL 120 μ s
3. Place the **MONITOR** switch in the **TAPE** position. (PMD221 only)
4. Depress the **PLAY** button.
5. Adjust the **LEVEL** control for a comfortable listening level.

NOTE:

For playback through an optional headphone, or line output connections, refer to the **SPECIAL FEATURES** SECTION.

REWIND

Check that the **MEMORY REW** switch is in the **OFF** position. (PMD221 only) To rewind a tape, depress the **REW/REVIEW** button. The tape will rewind to the beginning. To stop at other desired points, depress the **STOP/EJECT** button.

REVIEW

Check that the **MEMORY REWIND** switch is in **OFF** position (PMD221 only). Partially depressing the **REW/REVIEW** button during playback operation permits you to monitor information on the tape as it rewinds. When fully depressed, no sound will be heard. When the desired portion of the tape is reached, release the button to automatically resume tape play.

FAST FORWARD

To rapidly advance the tape in a forward direction, depress the **FF/CUE** button. When the desired point is reached, depress the **STOP/EJECT** button.

CUE

Check that the **MEMORY REW** switch is in the **OFF** position (PMD221 only). Partially depressing the **FF/CUE** button during playback operation permits you to monitor information on the tape as it is rapidly advanced. When fully depressed, no sound will be heard. When the desired portion of the tape is reached, release the button to automatically resume tape play.

PAUSE

Depress the **PAUSE** button to momentarily stop the tape in the record or playback modes. Depress the button a second time to resume tape motion.

The pause feature provides for the convenient editing of material while recording or playing back individual short segments of tape.

CAUTION:

The **FF** and **REW** buttons will not lock if no battery or AC power is supplied. This is not an indication of trouble with the unit.

With the **MEMORY REW** switch set to **ON**, the **REW** and **FF** button cannot be locked when the tape counter reads 900 — 999 (PMD221 only).

PITCH CONTROL

The **PITCH** control operates only during playback. Normal speed is indicated when the **PITCH** control is set to the center (click) position.

CAUTION:

- When recording using a microphone, howling may result with the **SPKR MON** switch set to **ON**. At that time, use headphones or set the **SPKR MON** switch to **OFF**.
- At the beginning or end of a recording, popping noises are sometimes recorded on the tape. To prevent this, proceed as follows.
 1. Press the **PAUSE** button.
 2. Press the **RECORD** and **PLAY** button.
 3. Press the **PAUSE** button again to start recording.
 4. Press the **PAUSE** button to stop the tape.
 5. Press the **STOP** button to stop recording.
- When recording with batteries, using the speaker or headphones to monitor may exhaust the batteries. Set the monitor control to zero except when necessary.
- When the batteries are exhausted, the tape moves, but recording is not possible. Refer to the battery indicator to see if your batteries need to be replaced.
- When the unit is used at low temperatures, the power consumption of the unit increases and the battery voltage decreases. In low temperatures, the battery life may be shortened.